

REMARKS

This application has been carefully studied and amended in view of the Office Action dated March 19, 2008. Reconsideration of that action is requested in view of the following.

Claim 9 has been amended to incorporate the subject matter of claim 16 in order to advance the prosecution of this case. It is respectfully submitted that claim 9 and its dependent claims 10-15 are patentable over the prior art and particularly over Fell, Grosser, optionally Rinkewich, and further in view of Lusignea which had been the combination of references used in the rejection of claim 16.

As now amended parent claim 9 relates to a method for making a composite structure having a plastic honeycomb core and two skins on either side of the core. As now defined in claim 9 the skins are made of oriented plastic and are welded on the core by laser welding using a laser absorption layer. The remainder of the plastic parts are transparent to laser radiation. As a result, the orientation is preserved. In that regard, the welding using laser radiation takes place by the melting of a layer that, at least partly absorbs the laser radiation by means of the laser radiation in the weld zones without destroying the orientation. Note is made to page 2, lines 20-25 of the specification which refers to the practice of the invention when using oriented skins welded to a honeycomb that “the radiation-absorbent layer partially surrounds the end of the adjacent vertical wall of the honeycomb and thus ensures better anchoring than that which would be obtained by conventional assembly techniques, such as adhesive bonding or thermal welding, and to do so without impairing the superior mechanical properties conferred by the orientation”.

Of the four references which had been used in the rejection of claim 16 only Lusignea relates to honeycomb structures of which the skins may be oriented. But, in Lusignea there is no teaching of welding the skins on the core. To the contrary, Lusignea uses glue not any form of welding, much less laser radiation. See, for example, column 17, lines 56-58 which specifically refers to “A thin coating of the EA9346 adhesive was spread on the facesheet and the core carefully placed on top”. Thus, at best Lusignea is pertinent simply to the extent that it discloses oriented sheets or skins. There is no recognition in Lusignea, however, that the superior

mechanical properties conferred by the orientation could be maintained when oriented skins are welded to a honeycomb core and in particular by the use of laser radiation for the welding.

The disclosure in Lusignea is what might be expected since welding is a technique which is known to those of ordinary skill in the art for suppressing orientation (bi-or monoaxial) due to the fact that the parts have to be heated to be welded.

In contrast with the process of the invention of claim 9 the skins remain oriented because they are not heated in their mass: only the laser absorption layer (which may also be present only on the core) is heated (by absorbing the radiation) so that the orientation is conserved or maintained.

The remaining references which were used in the rejection of claim 16 likewise fail to disclose or suggest the method now defined in claim 9. None of these references teaches to use only a laser absorbent layer to prevent destruction of the orientation of a plastic part to be bonded. In fact, none of these references teaches the use of such a layer for what purpose so ever. It is submitted that the Examiner is not correct in concluding that in the process of Rinkewich there must be such a layer. In fact, the entire composition may be of laser adsorbing material which is, in fact, usually the case.

Since none of the references teaches the combination of using laser radiation for welding two oriented skins to a cellular honeycomb core in such a manner that a layer, at least partially, absorbs the laser radiation so that the welding takes place by the melting of this layer by means of the laser radiation in the weld zones without destroying the orientation. Lusignea which relates to oriented layers does not relate to using laser radiation for welding and thus is not pertinent to any suggestion of how such laser radiation could be used without destroying the orientation. The remaining references do not relate to oriented skins and thus could not be relied upon for techniques that could be used to weld the skins to a honeycomb core without destroying the orientation of the skins.

In view of the above remarks and amendments it is submitted that this application should be passed to issue.

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